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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,388	07/26/2001	Takao Kawasaki	040679-1315	8034

22428 7590 06/24/2003

FOLEY AND LARDNER  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER
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CORRIGAN, JAIME W

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 06/24/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/912,388

Applicant(s)

KAWASAKI ET AL.

Examiner

Jaime W Corrigan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 19-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19,20,34,37,38,40-46,48-50,52 and 54 is/are rejected.
- 7) ☒ Claim(s) 21-33, 35-36, 39, 47, 51, 53 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This Office Action is in response to the Amendment filed on 14 April 2003. Claims 50-54 have been added. Overall, claims 19-54 are pending in this application. The arguments with respect to the reference applied in the first Office Action were deemed persuasive, however, a new non-final rejection is set forth below.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19-20, 34, 37-38, 40-46, 48-50, 52, 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (PN 6,269,791) in view of Ohkawa (PN 5,494,008).

Tanaka discloses obtaining information on an exhaust valve closing timing (See Figure 12, Column 3 Lines 45-54, Column 4 Lines 5-13), an intake valve opening (See Column 15 Lines 10-17, Column 16 Lines 5-9) timing and an engine speed (See Figure 11 (35), Column 9 Lines 43-51, Column 10 Lines 1-5); and calculating an EGR quantity (See Column 27 Lines 37-39, Column 30 Lines 56-65) of the engine in accordance with

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the exhaust valve closing timing (See Figure 12, Column 3 Lines 45-54, Column 4 Lines 5-13), the intake valve opening timing (See Column 15 Lines 10-17, Column 16 Lines 5-9) and the engine speed (See Figure 11 (35), Column 9 Lines 43-51, Column 10 Lines 1-5); the method is an engine ignition (See Column 8 Lines 15-21, Column 9 Lines 16-21) timing control method, and ignition timing (See Column 8 Lines 15-21, Column 9 Lines 16-21) of the engine is controlled in accordance with the estimated EGR (See Column 27 Lines 37-39, Column 30 Lines 56-65) quantity; the method is an engine valve timing (See Column 9 Lines 5-11) control method, and an intake valve closing (See Column 25 Lines 58-67, Column 26 Lines 1-5) timing of the engine is controlled in accordance with the estimated EGR quantity (See Column 27 Lines 37-39, Column 30 Lines 56-65).

Tanaka fails to disclose an internal EGR quantity; exhaust valve closing timing is used for calculating the internal EGR quantity; calculating air intake quantity in accordance with internal EGR quantity; controlling the engine in accordance with the internal EGR quantity; controlling an engine operating parameter in accordance with the internal EGR quantity; a target exhaust valve closing timing for calculating the estimated internal EGR quantity.

Ohkawa teaches that it is conventional in the art to utilize an internal EGR quantity (See Abstract Lines 3-7, Column 8 Lines 62-65); the exhaust valve closing timing (See Column 3 Lines 45-55, Column 4 Lines 1-5), a target (See Abstract Lines 7-19, Column 2 Lines 49-54, Column 10 Lines 9-17) exhaust valve closing timing is used for the internal EGR quantity (See Abstract Lines 3-7, Column 8 Lines 62-65);

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calculating an engine cylinder intake air (See Column 8 Lines 51-55, Column 9 Lines 66-67, Column 10 Lines 49-54) quantity in accordance with the estimated internal EGR (See Abstract Lines 3-7, Column 8 Lines 62-65) quantity; a controlling section (See Figure 1 (80)) to control the engine in accordance with the internal (See Abstract Lines 3-7, Column 8 Lines 62-65) EGR quantity; controlling an engine operating parameter (See Abstract) of the engine in accordance with the internal EGR quantity (See Column 2 Lines 19-24).

It would have been obvious to one having ordinary skill in the art to have utilized the internal EGR quantity taught by Ohkawa in the Tanaka device since it would improve control of engine load and torque.

#### ***Allowable Subject Matter***

Claims 21-33, 35-36, 39, 47, 51, 53 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 19, 37-38, 40, 42, 44-46, 48-49 have been considered but are moot in view of the new ground(s) of rejection.

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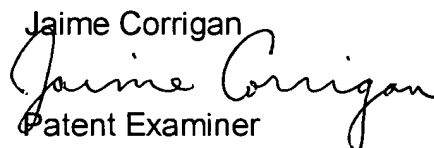
**Conclusion**

Any inquiry concerning this communication from the examiner should be directed to Examiner Jaime Corrigan whose telephone number is (703) 308-2639. The examiner can normally be reached on Monday - Friday from 8:30 a.m. – 6:00 p.m. 2<sup>nd</sup> Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (703) 308-2623. The fax number for this group is (703) 872-9302. After Final (703) 872-9303.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

JC

Jaime Corrigan  
  
Patent Examiner

June 23, 2003

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THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700